

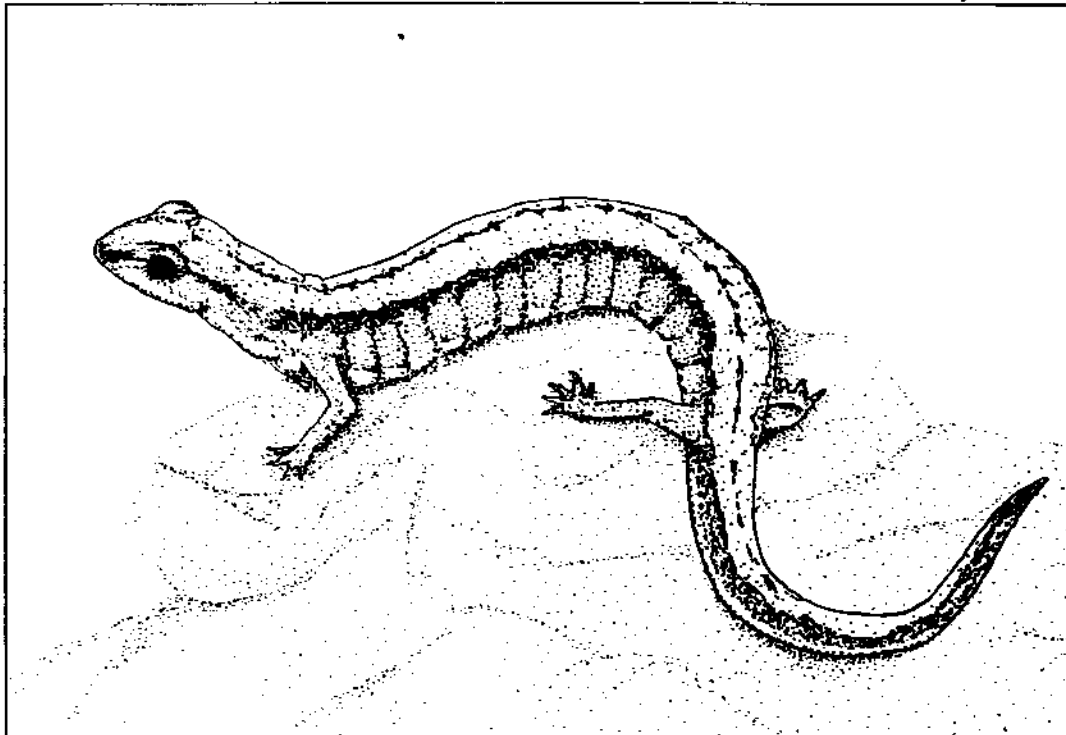
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# W<sup>DEPARTMENT OF WILDLIFE</sup> Washington

July 1993



## **STATUS OF THE LARCH MOUNTAIN SALAMANDER (*Plethodon larselli*) IN WASHINGTON**



Washington  
Department of Wildlife  
Wildlife Management Division

The Washington Department of Wildlife maintains a list of endangered, threatened and sensitive species (Washington Administrative Codes 232-12-014 and 232-12-011, Appendix A). Species are evaluated for listing using a set of procedures developed by a group of citizens, interest groups, and state and federal agencies (Washington Administrative Code 232-12-297, Appendix A). The procedures were adopted by the Washington Wildlife Commission in 1990. They specify how species listing will be initiated, criteria for listing and delisting, public review, and recovery and management of listed species.

The first step in the process is to develop a preliminary species status report. The report includes a review of information relevant to the species' status in Washington including, but not limited to: historic, current, and future species population trends, natural history including ecological relationships, historic and current habitat trends, population demographics and their relationship to long term sustainability, and historic and current species management activities.

The procedures then provide for a 90-day public review opportunity for interested parties to submit new scientific data relevant to the status report and classification recommendation. During the 90-day review period, the Department holds one public meeting in each of its administrative regions. At the close of the review of the draft report, the Department completes a final status report and listing recommendation for presentation to the Washington Wildlife Commission. The final report, listing recommendation, and any State Environmental Policy Act findings are then released for public review 30 days prior to the Commission presentation.

This report is the Department of Wildlife's final Status Report and listing recommendation for the Larch Mountain salamander. The listing proposal will be presented to the Washington Wildlife Commission on August 14, 1993 at the Colville Community Center, Colville, Washington. Comments on the report and recommendation may be sent to: Endangered Species Program Manager, Washington Department of Wildlife, 600 Capitol Way N, Olympia, WA 98501-1091; or presented to the Wildlife Commission at its August 14 meeting.

This report should be cited as:

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Status of the  
Larch Mountain Salamander  
(*Plethodon larselli*)  
in Washington

July 1993

Washington Department of Wildlife  
600 Capitol Way N  
Olympia, WA 98501-1091

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## EXECUTIVE SUMMARY

The Larch Mountain salamander (*Plethodon larselli*) is a small, lungless salamander found only in Washington and Oregon. It lives in rock fields known as talus and in the lava rock rubble associated with the lava tubes of the southern Cascade Mountains of Washington. The species has specialized microhabitat requirements that restrict it to specific sites, most often on steep wooded slopes where talus is comprised of rocks 1-6 cm (0.5-2.5 in) in length. Currently, populations are known from 35 sites in Washington; 29 in Skamania County, 3 in Klickitat County, 2 in Lewis County, and 1 in Clark County.

In the past, populations have been affected by rock removal for road building, degradation of microhabitat conditions through logging of overstory trees, and permanent loss of talus fields to a variety of human developments. Rock removal for road-building usually involves removal of rock from the base of a talus covered slope. As a result, the entire talus field shifts and eroding soil fills crevices, rendering the talus unsuitable for salamanders. Forest overstory removal exposes the talus to temperature extremes that cannot be endured by the salamanders.

Since 1980, the Larch Mountain salamander has been placed on the U.S. Forest Service Regional Forester's sensitive species list, the U.S. Fish and Wildlife Service's Candidate Category 2 species list, the Washington Department of Wildlife list of Candidate species and its list of Priority Species. As a result, the needs of the Larch Mountain salamander are being considered in all federal or federally permitted projects, forest practices review, road construction projects, various activities at the county planning level, and in the review of a variety of land uses regulated by the Columbia River Gorge Commission.

Although existing management is providing habitat security in most areas, a comprehensive approach to habitat protection is needed. Laws requiring habitat protection are currently lacking though they may prove necessary. Cooperative efforts to conserve habitat must continue and, ideally, be strengthened. Plans for long-term habitat protection need to be developed and agreed to by the agencies and individuals involved. The Larch Mountain salamander is vulnerable to habitat alteration. At this time, long-term survival of Larch Mountain salamanders is possible if land use management continues to consider the species' needs. Searches for new populations must continue as well.

It is recommended that the Larch Mountain salamander be designated a sensitive species in Washington.

## TAXONOMY

The Larch Mountain salamander (*Plethodon larselli*) belongs to the class Amphibia, order Caudata, and family Plethodontidae. It is one of 42 species of lungless salamanders, genus *Plethodon*, known from North America (Collins 1990). Burns (1954) described this taxon as a subspecies of Van Dyke's salamander (*Plethodon vandykei*). Subsequently, Burns (1962) examined additional specimens and elevated the Larch Mountain salamander to specific status. Recently, electrophoretic studies have found it most closely related to the Jemez Mountains salamander (*Plethodon neomexicanus*). The Jemez Mountains salamander is a relict species with small disjunct populations located in a restricted area of the Jemez Mountains of New Mexico (Highton and Larson 1979).

Three additional species of the genus *Plethodon* are known from Washington. They are the Van Dyke's salamander, western red-backed salamander (*Plethodon vehiculum*), and Dunn's salamander (*Plethodon dunni*). Another closely related species, the ensatina (*Ensatina eschscholtzii*), is also found in Washington (Nussbaum et al. 1983).

## DESCRIPTION

Larch Mountain salamanders are small, measuring up to 52 mm (2 in) snout-vent length and 100 mm (4 in) total length. They have a yellow, chestnut, or reddish dorsal stripe, pinkish venter, a single phalanx in the fifth toe of each hind foot, and no mental glands in males (Nussbaum et al. 1983, Stebbins 1985).

### Similar Species

The Larch Mountain salamander is best distinguished from other salamanders of the genus *Plethodon* by the short fifth toe of the hind feet and by the pink underbelly of live animals. The ensatina lacks these characteristics and has a constriction at the base of the tail. The long-toed salamander (*Ambystoma macrodactylum*) has longer toes, lacks the nasolabial groove that is present in the *Plethodon*, and lacks the pink underbelly (Leonard et al. 1993).

## GEOGRAPHICAL DISTRIBUTION

### North America

The Larch Mountain salamander is known only from Washington and Oregon. Its range is extremely restricted, with the majority of known populations located in the Columbia River Gorge region of Washington and Oregon (Nussbaum et al. 1983, Leonard et al. 1993).

## Washington

Larch Mountain salamander populations occur primarily near the Columbia River Gorge of Skamania and western Klickitat counties (Fig. 1). However, additional populations are known from the lava tube caves north of the Lewis River and several forested areas near Packwood in Lewis County (Aubry et al. 1987). During 1991 and 1992, U.S. Forest Service biologists found additional individuals in the Cowlitz and Cispus River drainages near the Packwood site (W. Johnson, pers. comm.; T. Kogut, pers. comm.; C. Crisafulli, pers. comm.).

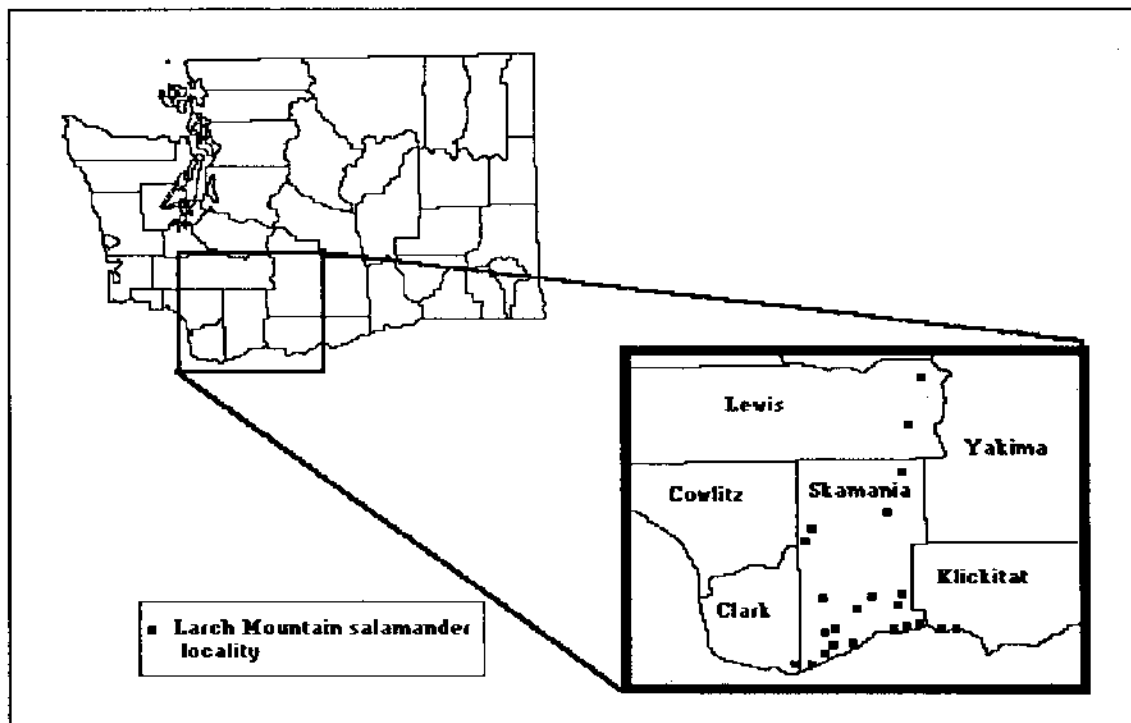


Figure 1. Larch Mountain salamander localities in Washington.

Most populations are found at 50-800 m elevations (150-2,500 ft), though the Packwood site is at 1,100 m (3,300 ft). D. Major (pers. comm.) reports Larch Mountain salamanders from a talus slope at Zig Zag Lake, which is at 1,250 m (3,800 ft) elevation. Table 1 provides a list of Larch Mountain salamander locations reported to date.

Table 1. Larch Mountain salamander sites in Washington.

Site Name	County	Selected References (including museum specimens)
Lawton Creek	Clark	J. H. Howard, letter dated 29 May 1979 to H. A. Beecher
Bingen East	Klickitat	Larsen and Herrington (1983)
Locke Lake	Klickitat	Larsen and Herrington (1983)
Rowland Lake	Klickitat	Larsen and Herrington (1983)
Cortright Creek	Lewis	T. Kogut (pers. comm.)
Johnson Creek	Lewis	Aubry et al. 1987
Ape Cave entrance	Skamania	K. McAllister (pers. obs.)
Archer Falls/Archer Mtn.	Skamania	Burns (1962); UMMZ 136316, 18,19,21,23,25,27; 120517; 150704-5; ILL 50387-90; FMNH 152588; LA 31129-34; AMNH 70243-44; MVZ 184193; PSM 9615
Archer West	Skamania	J. H. Howard, letter dated 29 May 1979 to H. A. Beecher
Beacon Rock State Park	Skamania	Larsen and Schaub (1982); UMMZ 135603;
Big Lava Bed	Skamania	T. Mathies (pers. comm.)
Cruzatt	Skamania	J. H. Howard, letter dated 29 May 1979 to H. A. Beecher
Drano Lake #1	Skamania	Larsen and Herrington (1983)
Drano Lake #2	Skamania	Larsen and Schaub (1982)
Frog Lake	Skamania	Larsen and Herrington (1983)
Grant Lake	Skamania	J. H. Larsen, Jr., letter dated 27 April 1984 to W. Nelson
Hood	Skamania	Larsen and Herrington (1983)
Lower Dog Creek	Skamania	Larsen and Schaub (1982); UMMZ 135602, 135747, 136328-29
Mahee Mines	Skamania	Larsen and Schaub (1982)
Martha Creek	Skamania	Jones and Bury (1983)
Mt Zion	Skamania	Larsen and Herrington (1983)
Oklahoma Campground	Skamania	Larsen and Herrington (1983)
Ole's Cave 3rd entrance	Skamania	Aubry et al. (1986)
Panther Creek West	Skamania	Larsen and Herrington (1983)
Panther Creek East	Skamania	Larsen and Herrington (1983)
Powerline Cave	Skamania	C. M. Senger, undated letter to Nongame Prog., Wash. Dept. Game
Quartz Creek	Skamania	C. Crisafulli (pers. comm.)
Stevenson	Skamania	Larsen and Herrington (1983)
Tunnel Lake	Skamania	Larsen and Herrington (1983)
Tule Creek	Skamania	W. Johnson (pers. comm.)
Washougal #1	Skamania	Larsen and Herrington (1983); UMC 2094C
Washougal #2	Skamania	Larsen and Herrington (1983); UMC 2062-63C
Washougal #3	Skamania	Larsen and Herrington (1983)
Wind Mountain	Skamania	Larsen and Herrington (1983)
Zig Zag Lake	Skamania	D. Major (pers. comm.)

## Museum Codes:

AMNH-Am. Mus. Nat. Hist., New York

FMNH-Field Mus. Nat. Hist., Chicago

ILL-Univ. Ill., Urbana-Champaign

LA-Nat. Hist. Mus., Los Angeles

MVZ-Mus. Vert. Zool., Berkeley

PSM-Puget Sound Mus., Tacoma

UMC-Univ. Missouri, Columbia

UMMZ-Univ. Mich. Mus. Zool.

Information on amphibian distributions has accumulated over time with few investigations conducted in a systematic way. Knowledge of the distribution of the Larch Mountain salamander has grown through the efforts of many investigators (Holmes 1969, Larsen and Schaub 1982, Larsen and Herrington 1983, Aubry et al. 1987). Herrington and Larsen (1985) used LANDSAT imagery and aerial photos to identify potentially suitable habitat within the Columbia River Gorge region of Washington. During their follow-up field work, they found 16 previously unknown populations.

Since Herrington and Larsen's investigations, additional information has demonstrated a substantially broader range in Washington (Aubry et al. 1987; Wash. Dept. Wildl., unpubl. data). While the new information provides cause for expanding the search for populations, the species' specialized habitat associations make it unlikely that many additional populations will be found. The Gifford Pinchot National Forest, which comprises much of the area in need of inventory, is estimated to be less than 5% talus (Scharpf and Dobler 1985) and it is unlikely that all of this talus is suitable for Larch Mountain salamanders.

## NATURAL HISTORY

### Behavioral Characteristics

Larch Mountain salamanders move around within talus, seeking out microclimates that suit their physiological needs. They tend to be more active at the surface during periods of high humidity and moderate temperature.

The courtship behaviors of some plethodontids have been described, but this is not the case for the Larch Mountain salamander. Presumably, there is a courtship ritual associated with the deposition of a spermatophore cap by the male and the female's subsequent collection of the spermatophore cap with her cloaca.

Larch Mountain salamanders will often coil up when disturbed, exposing the colorful underside, a behavior thought to mimic that of millipedes (Brodie et al. 1974). Since millipedes have noxious and/or toxic secretions, such mimicry may deter predators. These salamanders sometimes react to disturbance by coiling and uncoiling rapidly, resulting in fast and erratic propulsion away from the disturbance. They come to rest suddenly, their sudden immobility making them difficult to relocate (Nussbaum et al. 1983).

### Interspecific Relationships

In Washington, the western red-backed salamander is the only congeneric found regularly at sites occupied by Larch Mountain salamanders (Herrington 1985). In the

Lewis River drainage, Van Dyke's salamanders are found in association with Larch Mountain salamanders (Aubry et al. 1987; C. Crisafulli, pers. comm.). Niche separation between these closely related species is unknown. Other salamanders found sympatrically with the Larch Mountain salamander are the ensatina, Cascade torrent salamander (*Rhyacotriton cascadae*), Pacific giant salamander (*Dicamptodon tenebrosus*), and Cope's giant salamander (*Dicamptodon copei*) (Larsen and Schaub 1982).

Predators of this species are unknown.

## Food

Larch Mountain salamanders eat mainly mites and collembolans (spring-tails) with larger individuals eating a wider variety of prey including snails and earthworms. Millipedes, centipedes, and pseudoscorpions are also part of their diet (Altig and Brodie 1971, Nussbaum et al. 1983).

## HABITAT REQUIREMENTS

### General

Members of the genus *Plethodon* are termed woodland salamanders. They are found mainly in loose talus mixed with damp soil and in the litter of the forest floor (Nussbaum et al. 1983). Herrington and Larsen (1985) provide the following information on Larch Mountain salamander habitat. Larch Mountain salamanders are typically associated with steep, wooded talus slopes where the rocks are of small size, typically 1-6 cm (0.5 to 2.5 in) in length. Protection from long periods of sun exposure is usually provided by trees or large adjacent rock formations. Overstory trees are often Douglas-fir (*Pseudotsuga menziesii*), Oregon ash (*Fraxinus oregana*), and bigleaf maple (*Acer macrophyllum*) in the western portion of the salamander's range and ponderosa pine (*Pinus ponderosa*) and Oregon white oak (*Quercus garryana*) in the drier eastern areas.

Larch Mountain salamander habitat often includes large quantities of decaying plant material and small quantities of soil. The accumulation of organic debris provides moisture retention and an environment suitable for invertebrate communities on which the salamanders feed. Soil can obstruct movement through the talus and is therefore scarce in salamander habitat. Aubry et al. (1987) report two Larch Mountain salamander collection sites that lack some of these features. The first is a 650-year-old closed canopy stand of Douglas-fir with a rocky forest floor and dry mineral soil with very low organic content. Here, a single salamander was collected from a pitfall trap. The second is in the entrance of a lava tube on a lava flow. Chunks of lava and some woody debris, as well as cracks in the cave walls, may provide cover for the salamanders

in this area. The surrounding vegetation is a lava flow scrub forest of lodgepole pine with scattered Douglas-fir.

## Food

Larch Mountain salamanders feed on a wide variety of invertebrates found within their favored habitats. At this time, it is not possible to distinguish between the habitat requirements of the salamander (disregarding its food) and the habitat requirements of the salamander's prey.

## Breeding Habitat

Nests with eggs of the Larch Mountain salamander have not been described. Eggs are probably laid in nests deep in the talus (Herrington 1988).

## Seasonal Habitat

Larch Mountain salamanders adjust to seasonal changes in temperature and moisture by moving through the talus in search of microclimates favorable to their survival (Herrington 1988).

# POPULATION DEMOGRAPHICS

## Reproduction

Larch Mountain salamander demographics are poorly known. Herrington and Larsen (1987) document some aspects of the species' reproductive biology. Males mature in approximately 3 years, whereas females mature in 4 years. Nests have not been reported but it is believed that eggs are laid deep in the talus. Eggs are probably laid in late March and early April. Oviductal egg counts indicate that reproductive females produce a single clutch of 2 to 12 eggs each year, with an average clutch of 6.9 eggs in western Washington. Like other *Plethodon*, Larch Mountain salamanders are believed to brood their eggs. Eggs hatch in approximately 4 months and the young probably spend the first 1-2 months deep in the talus. The emergence of young from the talus follows the onset of the fall rainy season (late October - November) (Herrington and Larsen 1987).

Virtually nothing is known about survival rates, age or sex-specific mortality, or longevity.

## Mortality

The only mortality factors addressed in published accounts of this species pertain to population losses due to habitat alteration and will be discussed in the section titled "Factors Affecting Continued Existence."

## POPULATION STATUS

### Past

The history of the study of Larch Mountain salamanders is short. The taxon was described (as a subspecies) relatively recently (Burns 1954). Relatively little information was available prior to 1970.

Populations that have been studied are distinct. They have been isolated from one another for an unknown period of time. Likely, the species had a broader, more continuous range during the Pleistocene (Howard et al. 1983). The current limited range of this species, coupled with data indicating that most populations are small and isolated, suggest that it is a relict species on the decline (Herrington 1985).

### Present

Larch Mountain salamanders have been reported from 35 sites in Washington (Table 1). The sizes of these populations have not been determined. Additional populations may exist in the relatively unsearched portion of the Cascade Range between Mount Rainier and the Columbia River Gorge. However, the species' entire geographic range is relatively small and individual populations appear to be both small and isolated from one another.

### Future

The ability of this species to colonize new, unoccupied habitat is apparently low. Therefore, the future of the species depends upon protection of existing occupied habitat. Currently, forest overstory removal and destruction of talus fields by gravel mining and development are the primary threats. In the absence of these habitat alterations, the Larch Mountain salamander will probably persist for the foreseeable future at most currently known sites.



## HABITAT STATUS

### Past

During historic times, the Larch Mountain salamander's habitat has been patchily distributed talus fields and lava tubes where the microclimate meets the species' specialized requirements. As stated earlier, talus fields are estimated to comprise less than 5% of the landscape on the Gifford Pinchot National Forest, an area that includes about one third of the species' known populations (Scharpf and Dobler 1985). Because the Larch Mountain salamander is a recently described and secretive species, there is little information on its distribution prior to 1980. However, past activities have significantly altered many talus fields within the Larch Mountain salamander's range. In Washington and Oregon, a survey of talus habitat found 106 of 183 talus slopes had been altered. Of these, 76 had noticeable quantities of talus removed, 13 had been deforested, and 17 had been altered by both events (Herrington 1988).

### Present

At present, there is widespread recognition that Larch Mountain salamanders may be jeopardized by alterations to talus areas. In response to this, consideration for the species is incorporated into forest practices permit review, U.S. Forest Service timber sale review, and Washington Department of Transportation project review. As a result, habitat alterations are likely effecting fewer populations than in the past. However, some activities probably continue to destroy habitat, particularly activities in areas that are not yet documented to support Larch Mountain salamanders.

### Future

Larch Mountain salamander habitat, in most areas, can be considered secure if adequate efforts are made to accurately identify these habitats and communicate the needs of the species to landowners and others planning land uses within the species' range. Larch Mountain salamander habitat will need to be given special consideration in the future; however, conservation measures are generally attainable without dramatic changes to existing land use plans.

## CONSERVATION STATUS

### Legal Status

The Larch Mountain salamander is unclassified under the Wildlife Code of the State of Washington. Therefore, the many laws that protect Game Animals and Protected

Wildlife do not apply. However, it is illegal to buy, sell, or trade this species. Scientific collecting, public display, or possession of Larch Mountain salamanders for rehabilitation and subsequent release require permits. Simple possession of Larch Mountain salamanders does not require a permit.

The U.S. Fish and Wildlife Service (USFWS) has placed the species on its Category 2 list of species that may warrant listing under the Endangered Species Act. Category 2 species are those for which additional information is needed to determine whether listing is warranted. However, the USFWS recommends protection of the species and its habitat. Binding legal protection is not provided by listing as a Candidate Category 2 species.

## Management Activities

The Larch Mountain salamander became a conservation concern in the late 1970's when The Nature Conservancy first established the Washington Natural Heritage Program. In 1980, the Nongame Program of the WDW added the Larch Mountain salamander to its list of species of special concern. The Larch Mountain salamander then became a WDW state Candidate species, to be reviewed for possible listing as an endangered, threatened, or sensitive species, in 1991.

These lists help the Department establish priorities for management and research activities. As a result, Larch Mountain salamanders have received greater attention during reviews of Forest Practices Applications, permits for subdivisions, and other land uses for which the Department provides input. In addition, Larch Mountain salamander research and habitat surveys received significant funding during the early 1980's.

The Larch Mountain salamander is also a Priority Species under the Washington Department of Wildlife Priority Habitats and Species Program. This program is designed to use Geographic Information Systems technology to store information on special habitats. Such information is made available to local governments and others, primarily to facilitate compliance with Washington's Growth Management Act. Habitat Management Recommendations are provided along with the site-specific habitat information. It is too early to tell how effective this approach will be in maintaining important habitats for Priority Species.

The U.S. Forest Service, which manages at least 11 sites where Larch Mountain salamanders have been found (including the Columbia River Gorge National Scenic Area), has the species on its Regional Forester's Sensitive Species list. As a result, land uses are reviewed and modified, if necessary, to provide some protection for the species.

Private landowners with documented Larch Mountain salamander habitat may be faced with regulatory controls or land use negotiations when applying for permits such as a

Forest Practices permit. Forest Practices Applications are subjected to a computer query process which identifies certain important features that might be affected by the proposed forest practice. The Washington Department of Wildlife becomes involved when important habitat for a species of special concern is involved.

## FACTORS AFFECTING CONTINUED EXISTENCE

### Adequacy of Existing Regulatory Mechanisms

While the Larch Mountain salamander appears on many lists, conservation of habitat is dependent upon interagency cooperation and the cooperation of private landowners. At this time, laws requiring consideration of Larch Mountain salamander habitat do not exist. Current levels of cooperative habitat protection need to be strengthened. Without agreements for comprehensive, long-term habitat protection, the species must be considered inadequately protected.

### Present and Threatened Habitat Loss

Talus commonly provides rock used in road-building. In Larch Mountain salamander habitat, this is one of the most common and destructive impacts to the species. The removal of quantities of rock results in shifting of the talus field towards the base of the slope. Erosion and silt deposition within the talus often follows. The changes to the talus and soils render the slope uninhabitable by Larch Mountain salamander populations (Herrington and Larsen 1985).

Removal of overstory trees can render habitat uninhabitable as well. At the Mabey Mines site, talus fields on different sides of the creek differ in that one has been clearcut while the other is covered by mature forest. Larch Mountain salamanders are not found on the clearcut site. They are present and maintain stable numbers at the tree-covered site (Herrington and Larsen 1985).

Herrington (1988) reports that 106 of 183 talus slopes surveyed in Washington and Oregon were altered by rock removal, tree removal, or both.

Of 35 locations where Larch Mountain salamanders have been found, roughly half are on private land. The other half are predominately in the Gifford Pinchot National Forest. Privately owned lands in the Columbia River Gorge are being developed as home or recreation sites at a rapid rate (Herrington 1985).

Though there is ample evidence suggesting that Larch Mountain salamanders can spend their entire life cycle within the talus, there is almost nothing known about the frequency of dispersal from one suitable site to another. Kirk (1983) reports one Larch Mountain

salamander captured for 126 pitfall trap nights at three sites known to have good populations. These results suggest that Larch Mountain salamanders are not easily trapped in pitfall traps. Among the potential reasons for this is the possibility of a low dispersal rate for this species. If dispersal is rare in this species, this factor combined with the patchy distribution of suitable habitat suggest poor ability to colonize new habitats.

Four populations (two in Washington, two in Oregon) are known to be genetically distinct. There are no variant alleles shared by these populations, indicating that gene flow between them is low to nonexistent (Howard et al. 1983). These data support other indications that the species has low vagility and exists in isolated populations.

### Other Natural and Manmade Factors

Larch Mountain salamanders lack genetic diversity. Of 30 presumptive allozyme loci examined by Howard et al. (1983), 25 are monomorphic. As a result the species may be poorly equipped to adapt to changing environmental conditions over the long term.

## CONCLUSIONS AND RECOMMENDATION

Larch Mountain salamander habitat is limited in abundance and distribution. Although additional populations may be found, the species will likely never be considered abundant. The overall range within Washington is restricted to the Columbia River Gorge and scattered localities in the southern Cascade Mountains.

Within this animal's restricted range, Larch Mountain salamander populations are vulnerable to several kinds of habitat alteration that can cause local population loss. Their talus habitat combines crucial structural and microhabitat conditions that are quite easily disrupted. Rock removal, harvest of the forest overstory, and talus removal for development all have affected populations in the past. Without continued vigilance and cooperation, these activities will affect populations in the future.

A management plan needs to be developed for the species which outlines long-term habitat protection measures. There is clearly a need to plan and conduct land uses to avoid harmful effects to Larch Mountain salamander populations. Without this effort, we might expect population losses over time. In a species so limited in distribution and numbers, each population could be important to long-term species' survival.

Because the Larch Mountain salamander is vulnerable to habitat alteration, but relatively secure at this time as a result of current management consideration, it is recommended that the Larch Mountain salamander be designated as a Sensitive species in Washington.

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## PERSONAL COMMUNICATIONS

Hal A. Beecher, Ph.D.  
Washington Natural Heritage Program  
Olympia, Washington  
(currently at Washington Department of Wildlife, Olympia)

Charles Crisafulli, Ecologist  
Mount St. Helens National Volcanic Monument  
Amboy, Washington

James H. Howard, Ph.D.  
Department of Biological Sciences  
University of Idaho  
Moscow, Idaho  
(currently at Frostburg State College, Frostburg, Maryland)

Wayne Johnson, District Wildlife Biologist  
Randle Ranger District  
Randle, Washington

Tom Kogut, District Wildlife Biologist  
U.S. Forest Service  
Packwood Ranger District  
Packwood, Washington

Don Major, Wildlife Biologist  
U.S. Forest Service  
Wind River Ranger District  
Carson, Washington

Tom Mathies, Zoology student  
University of Washington  
Seattle, Washington

Will Nelson, Wildlife Biologist  
Washington Department of Game  
Olympia, Washington

Clyde M. Senger, Ph.D.  
Department of Biology  
Western Washington University  
Bellingham, Washington

# Appendix A

## Washington Administrative Codes

232-12-297, 232-12-011, 232-12-014



**WAC 232-12-297 Endangered, threatened, and sensitive wildlife species classification.**

**PURPOSE**

- 1.1 The purpose of this rule is to identify and classify native wildlife species that have need of protection and/or management to ensure their survival as free-ranging populations in Washington and to define the process by which listing, management, recovery, and delisting of a species can be achieved. These rules are established to ensure that consistent procedures and criteria are followed when classifying wildlife as endangered, or the protected wildlife subcategories threatened or sensitive.

**DEFINITIONS**

For purposes of this rule, the following definitions apply:

- 2.1 "Classify" and all derivatives means to list or delist wildlife species to or from endangered, or to or from the protected wildlife subcategories threatened or sensitive.
- 2.2 "List" and all derivatives means to change the classification status of a wildlife species to endangered, threatened, or sensitive.
- 2.3 "Delist" and its derivatives means to change the classification of endangered, threatened, or sensitive species to a classification other than endangered, threatened, or sensitive.

- 2.4 "Endangered" means any wildlife species native to the state of Washington that is seriously threatened with extinction throughout all or a significant portion of its range within the state.
- 2.5 "Threatened" means any wildlife species native to the state of Washington that is likely to become an endangered species within the foreseeable future throughout a significant portion of its range within the state without cooperative management or removal of threats.
- 2.6 "Sensitive" means any wildlife species native to the state of Washington that is vulnerable or declining and is likely to become endangered or threatened in a significant portion of its range within the state without cooperative management or removal of threats.
- 2.7 "Species" means any group of animals classified as a species or subspecies as commonly accepted by the scientific community.
- 2.8 "Native" means any wildlife species naturally occurring in Washington for purposes of breeding, resting, or foraging, excluding introduced species not found historically in this state.
- 2.9 "Significant portion of its range" means that portion of a species' range likely to be essential to the long term survival of the population in Washington.

**LISTING CRITERIA**

- 3.1 The commission shall list a wildlife species as endangered, threatened, or sensitive solely on the basis of the biological status of the species being considered, based on the preponderance of scientific data available, except as noted in section 3.4.
- 3.2 If a species is listed as endangered or threatened under the federal Endangered Species Act, the agency will recommend to the commission that it be listed as endangered or threatened as specified in section 9.1. If listed, the agency will proceed with development of a recovery plan pursuant to section 11.1.
- 3.3 Species may be listed as endangered, threatened, or sensitive only when populations are in danger of failing, declining, or are vulnerable, due to factors including but not restricted to limited numbers, disease, predation, exploitation, or habitat loss or change, pursuant to section 7.1.
- 3.4 Where a species of the class Insecta, based on substantial evidence, is determined to present an unreasonable risk to public health, the commission may make the determination that the species need not be listed as endangered, threatened, or sensitive.

**DELISTING CRITERIA**

- 4.1 The commission shall delist a wildlife species from endangered, threatened, or sensitive solely on the basis of the biological status of the species being

considered, based on the preponderance of scientific data available.

- 4.2 A species may be delisted from endangered, threatened, or sensitive only when populations are no longer in danger of failing, declining, are no longer vulnerable, pursuant to section 3.3, or meet recovery plan goals, and when it no longer meets the definitions in sections 2.4, 2.5, or 2.6.

#### INITIATION OF LISTING PROCESS

- 5.1 Any one of the following events may initiate the listing process.
- 5.1.1 The agency determines that a species population may be in danger of failing, declining, or vulnerable, pursuant to section 3.3.
  - 5.1.2 A petition is received at the agency from an interested person. The petition should be addressed to the director. It should set forth specific evidence and scientific data which shows that the species may be failing, declining, or vulnerable, pursuant to section 3.3. Within 60 days, the agency shall either deny the petition, stating the reasons, or initiate the classification process.
  - 5.1.3 An emergency, as defined by the Administrative Procedure Act, chapter 34.05 RCW. The listing of any species previously classified under emergency rule shall be governed by the provisions of this section.
  - 5.1.4 The commission requests the agency review a species of concern.
- 5.2 Upon initiation of the listing process the agency shall publish a public notice in the Washington Register, and notify those parties who have expressed their interest to the department, announcing the initiation of the classification process and calling for scientific information relevant to the species status report under consideration pursuant to section 7.1.

#### INITIATION OF DELISTING PROCESS

- 6.1 Any one of the following events may initiate the delisting process:
- 6.1.1 The agency determines that a species population may no longer be in danger of failing, declining, or vulnerable, pursuant to section 3.3.
  - 6.1.2 The agency receives a petition from an interested person. The petition should be addressed to the director. It should set forth specific evidence and scientific data which shows that the species may no longer be failing, declining, or vulnerable, pursuant to section 3.3. Within 60 days, the agency shall either deny the petition, stating the reasons, or initiate the delisting process.

- 6.1.3 The commission requests the agency review a species of concern.

- 6.2 Upon initiation of the delisting process the agency shall publish a public notice in the Washington Register, and notify those parties who have expressed their interest to the department, announcing the initiation of the delisting process and calling for scientific information relevant to the species status report under consideration pursuant to section 7.1.

#### SPECIES STATUS REVIEW AND AGENCY RECOMMENDATIONS

- 7.1 Except in an emergency under 5.1.3 above, prior to making a classification recommendation to the commission, the Agency shall prepare a preliminary species status report. The report will include a review of information relevant to the species' status in Washington and address factors affecting its status, including those given under section 3.3. The status report shall be reviewed by the public and scientific community. The status report will include, but not be limited to an analysis of:
- 7.1.1 Historic, current, and future species population trends
  - 7.1.2 Natural history, including ecological relationships (e.g. food habits, home range, habitat selection patterns).
  - 7.1.3 Historic and current habitat trends.
  - 7.1.4 Population demographics (e.g. survival and mortality rates, reproductive success) and their relationship to long term sustainability.
  - 7.1.5 Historic and current species management activities.
- 7.2 Except in an emergency under 5.1.3 above, the agency shall prepare recommendations for species classification, based upon scientific data contained in the status report. Documents shall be prepared to determine the environmental consequences of adopting the recommendations pursuant to requirements of the State Environmental Policy Act (SEPA).
- 7.3 For the purpose of delisting, the status report will include a review of recovery plan goals.

#### PUBLIC REVIEW

- 8.1 Except in an emergency under 5.1.3 above, prior to making a recommendation to the commission, the agency shall provide an opportunity for interested parties to submit new scientific data relevant to the status report, classification recommendation, and any SEPA findings.
- 8.1.1 The agency shall allow at least 90 days for public comment.

- 8.1.2 The agency will hold at least one public meeting in each of its administrative regions during the public review period.

#### FINAL RECOMMENDATIONS AND COMMISSION ACTION

- 9.1 After the close of the public comment period, the agency shall complete a final status report and classification recommendation. SEPA documents will be prepared, as necessary, for the final agency recommendation for classification. The classification recommendation will be presented to the commission for action. The final species status report, agency classification recommendation, and SEPA documents will be made available to the public at least 30 days prior to the commission meeting.
- 9.2 Notice of the proposed commission action will be published at least 30 days prior to the commission meeting.

#### PERIODIC SPECIES STATUS REVIEW

- 10.1 The agency shall conduct a review of each endangered, threatened, or sensitive wildlife species at least every five years after the date of its listing. This review shall include an update of the species status report to determine whether the status of the species warrants its current listing status or deserves reclassification.
- 10.1.1 The agency shall notify any parties who have expressed their interest to the department of the periodic status review. This notice shall occur at least one year prior to end of the five year period required by section 10.1.
- 10.2 The status of all delisted species shall be reviewed at least once, five years following the date of delisting.
- 10.3 The department shall evaluate the necessity of changing the classification of the species being reviewed. The agency shall report its findings to the commission at a commission meeting. The agency shall notify the public of its findings at least 30 days prior to presenting the findings to the commission.
- 10.3.1 If the agency determines that new information suggests that classification of a species should be changed from its present state, the agency shall initiate classification procedures provided for in these rules starting with section 5.1.
- 10.3.2 If the agency determines that conditions have not changed significantly and that the classification of the species should remain unchanged, the agency shall recommend to the commission that the species being reviewed shall retain its present classification status.

- 10.4 Nothing in these rules shall be construed to automatically delist a species without formal commission action.

#### RECOVERY AND MANAGEMENT OF LISTED SPECIES

- 11.1 The agency shall write a recovery plan for species listed as endangered or threatened. The agency will write a management plan for species listed as sensitive. Recovery and management plans shall address the listing criteria described in sections 3.1 and 3.3, and shall include, but are not limited to:
- 11.1.1 Target population objectives
- 11.1.2 Criteria for reclassification
- 11.1.3 An implementation plan for reaching population objectives which will promote cooperative management and be sensitive to landowner needs and property rights. The plan will specify resources needed from and impacts to the Department, other agencies (including federal, state, and local), tribes, landowners, and other interest groups. The plan shall consider various approaches to meeting recovery objectives including, but not limited to regulation, mitigation, acquisition, incentive, and compensation mechanisms.
- 11.1.4 Public education needs
- 11.1.5 A species monitoring plan, which requires periodic review to allow the incorporation of new information into the status report.
- 11.2 Preparation of recovery and management plans will be initiated by the agency within one year after the date of listing.
- 11.2.1 Recovery and management plans for species listed prior to 1990 or during the five years following the adoption of these rules shall be completed within 5 years after the date of listing or adoption of these rules, whichever comes later. Development of recovery plans for endangered species will receive higher priority than threatened or sensitive species.
- 11.2.2 Recovery and management plans for species listed after five years following the adoption of these rules shall be completed within three years after the date of listing.
- 11.2.3 The agency will publish a notice in the Washington Register and notify any parties who have expressed interest to the department interested parties of the initiation of recovery plan development.
- 11.2.4 If the deadlines defined in sections 11.2.1 and 11.2.2 are not met the department shall notify the public and report the reasons for missing the deadline and the strategy for completing the plan at a

commission meeting. The intent of this section is to recognize current department personnel resources are limiting and that development of recovery plans for some of the species may require significant involvement by interests outside of the department, and therefore take longer to complete.

- 11.3 The agency shall provide an opportunity for interested public to comment on the recovery plan and any SEPA documents.

#### CLASSIFICATION PROCEDURES REVIEW

- 12.1 The agency and an ad hoc public group with members representing a broad spectrum of interests, shall meet as needed to accomplish the following:
- 12.1.1 Monitor the progress of the development of recovery and management plans and status reviews, highlight problems, and make recommendations to the department and other interested parties to improve the effectiveness of these processes.
- 12.1.2 Review these classification procedures six years after the adoption of these rules and report its findings to the commission.

#### AUTHORITY

- 13.1 The commission has the authority to classify wildlife as endangered under RCW 77.12.020. Species classified as endangered are listed under WAC 232-12-014, as amended.
- 13.2 Threatened and sensitive species shall be classified as subcategories of protected wildlife. The commission has the authority to classify wildlife as protected under RCW 77.12.020. Species classified as protected are listed under WAC 232-12-011, as amended.

[Statutory Authority: RCW 77.12.020, 90-11-066 (Order 442), § 232-12-297, filed 5/15/90, effective 6/15/90.]

**WAC 232-12-011 Wildlife classified as protected shall not be hunted or fished.** Protected wildlife are designated into three subcategories: Threatened, sensitive, and other.

(1) Threatened species are any wildlife species native to the state of Washington that are likely to become endangered within the foreseeable future throughout a significant portion of their range within the state without cooperative management or removal of threats.

Protected wildlife designated as threatened include ferruginous hawk, *Buteoregalis*; bald eagle, *Haliaeetus leucocephalus*; western pond turtle, *Clemmys marmorata*; green sea turtle, *Cheloniia mydas*; loggerhead sea turtle, *Caretta caretta*; Oregon silverspot butterfly, *Speyeria zerene hippolyta*; pygmy rabbit, *Brachylagus idahoensis*.

(2) Sensitive species are any wildlife species native to the state of Washington that are vulnerable or declining and are likely to become endangered or threatened in a significant portion of their range within the state without cooperative management or removal of threats.

(3) Other protected wildlife.

Other protected wildlife include all birds not classified as game birds, predatory birds, or endangered species[,] or designated as threatened species or sensitive species; and fur seal, *Callorhinus ursinus*; fisher, *Martes pennanti*; wolverine, *Gulo luscus*; western gray squirrel, *Sciurus griseus*; Douglas squirrel, *Tamiasciurus douglasii*; red squirrel, *Tamiasciurus hudsonicus*; flying squirrel, *Glaucomys sabrinus*; golden-mantled ground squirrel, *Callospermophilus saturatus*; chipmunks, *Eutamias*; cony or pika, *Ochotona princeps*; hoary marmot, *Marmota caligata* and *olympus*; all wild turtles not otherwise classified as endangered species, or designated as threatened species or sensitive species; mammals of the order *Cetacea*, including whales, porpoises, and

mammals of the suborder *Pinnipedia* not otherwise classified as endangered species, or designated as threatened species or sensitive species. This section shall not apply to hair seals and sea lions which are threatening to damage or are damaging commercial fishing gear being utilized in a lawful manner or when said mammals are damaging or threatening to damage commercial fish being lawfully taken with commercial gear.

[Statutory Authority: RCW 77.12.020, 90-11-065 (Order 441), § 232-12-011, filed 5/15/90, effective 6/15/90. Statutory Authority: RCW 77.12.040, 89-11-061 (Order 392), § 232-12-011, filed 5/18/89; 82-19-026 (Order 192), § 232-12-011, filed 9/9/82; 81-22-002 (Order 174), § 232-12-011, filed 10/22/81; 81-12-029 (Order 165), § 232-12-011, filed 6/1/81.]

Reviser's note: RCW 34.05.395 requires the use of underlining and deletion marks to indicate amendments to existing rules, and deems ineffectual changes not filed by the agency in this manner. The bracketed material in the above section does not appear to conform to the statutory requirement.

**WAC 232-12-014 Wildlife classified as endangered species.** Endangered species include: Columbian white-tailed deer, *Odocoileus virginianus leucurus*; Mountain caribou, *Rangifer tarandus*; Blue whale, *Balaenoptera musculus*; Bowhead whale, *Balaena mysticetus*; Finback whale, *Balaenoptera physalus*; Gray whale, *Eschrichtius gibbosus*; Humpback whale, *Megaptera novaeangliae*; Right whale, *Balaena glacialis*; Sei whale, *Balaenoptera borealis*; Sperm whale, *Physeter catodon*; Wolf, *Canis lupus*; Peregrine falcon, *Falco peregrinus*; Aleutian Canada goose, *Branta canadensis leucopareia*; Brown pelican, *Pelecanus occidentalis*; Leatherback sea turtle, *Dermochelys coriacea*; Grizzly bear, *Ursus arctos horribilis*; Sea Otter, *Enhydra lutris*; White pelican, *Pelecanus erythrorhynchos*; Sandhill crane, *Grus canadensis*; Snowy plover, *Charadrius alexandrinus*; Upland sandpiper, *Bartramia longicauda*; Northern spotted owl, *Strix occidentalis*.

[Statutory Authority: RCW 77.12.020(6), 88-05-032 (Order 305), § 232-12-014, filed 2/12/88. Statutory Authority: RCW 77.12.040, 82-19-026 (Order 192), § 232-12-014, filed 9/9/82; 81-22-002 (Order 174), § 232-12-014, filed 10/22/81; 81-12-029 (Order 165), § 232-12-014, filed 6/1/81.]